ENVIRONMENTAL ASSESSMENT

CONSTRUCTION AND OPERATION

OF AN

AAFES SHOPETTE

FORT HUACHUCA, ARIZONA

AUGUST 2002

HOW THIS ENVIRONMENTAL ASSESSMENT IS ORGANIZED

CHAPTER 1 PURPOSE AND NEED FOR THE PROPOSED ACTION contains a statement of the purpose of and need for action, the location of the proposed action, a summary of the scope of the environmental review, identification of regulatory requirements, and this description of the organization of the document.

CHAPTER 2 DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES is composed of nine sections: an introduction, a brief history of the formation of alternatives, identification of alternatives eliminated from further consideration, a description of the proposed action and the other alternatives,

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CHAPTER 3 AFFECTED ENVIRONMENT contains a general description of the resources that potentially could be affected by the proposed action or alternatives.

CHAPTER 4 ENVIRONMENTAL CONSEQUENCES is an analysis of the environmental consequences, including the cumulative impacts related to the project in the context of regional activities.

CHAPTER 5 FINDINGS AND CONCLUSIONS

CHAPTER 6 LIST OF PERSONS AND AGENCIES CONSULTED identifies the persons and agencies consulted.

CHAPTER 7 LIST OF REFERENCES AND PUBLISHED SOURCES is a list of documents referenced throughout the EA.

ENVIRONMENTAL ASSESSMENT

CONSTRUCTION AND OPERATION OF AN AAFES SHOPETTE FORT HUACHUCA, ARIZONA

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August 2002

CONSTRUCTION AND OPERATION OF AN ARMY AND AIR FORCE EXCHANGE SERVICE (AAFES) SHOPETTE

LEAD AGENCY: Army Air Force Exchange Service

COOPERATING AGENCY: United States Army Intelligence Center and Fort Huachuca, Fort Huachuca, AZ

AFFECTED JURISDICTION: Cochise County, Arizona

PREPARED BY: URS Corporation, Portland Oregon for AAFES; and Environmental and Natural Resources Division, Fort Huachuca, AZ

REVIEWED BY: Commander, U.S. Army Garrison, Fort Huachuca

REVIEWED BY: General Manager, AAFES, Fort Huachuca, AZ

APPROVED BY: Commander, U.S. Army Intelligence Center & Fort Huachuca

ABSTRACT: The Army and Air Force Exchange Service (AAFES) proposes to construct a new, approximately 7,000 square foot building for use by authorized individuals at Fort Huachuca. The proposed action would consist of a convenience store with fast food restaurant, gasoline-dispensing pumps, and parking. Activities would include sales of convenience store-related items and fast food, and intake and processing of merchandise for sale. The pavement and parking areas would cover approximately 60,000 square feet. The total developed area would be about 1.5 acres. The gasoline dispensing area would have four islands with a total of 16 hoses, for up to eight vehicles at one time. Only AAFES authorized patrons, primarily active duty and retired military personnel, their family members, and some categories of reserve military personnel, would use the facility. The project would also include the installation of water conservation measures at other AAFES facilities on the post.

The location of the proposed project is on the southeast side of Winrow Avenue near its intersection with Wilcox Gate Road, the golf course road, and Brainard Road.

This EA describes the environmental impacts that the proposed shoppette would be expected to have. It also describes actions that would be taken to minimize these impacts.

REVIEW COMMENT DEADLINE: Public comments must be received within 30 days from the publishing date of this document. Public comments may be provided to: USAIC&FH, ATTN: ATZS-ISB (AAFES EA), Fort Huachuca, Arizona 85613-6000. Comments may also be faxed to (520) 533-3043. Copies of this document are available for review at the Sierra Vista Public Library and at the Main Library at Fort Huachuca on Smith Street.

This Environmental Assessment (EA) is part of the environmental impact analysis process (EIAP) for the proposed action as set forth in Army Regulation 200-2, *Environmental Effects of Army Actions*, dated March 29, 2002. This EA was prepared in compliance with the National Environmental Policy Act (NEPA) of 1969, the Council on Environmental Quality (CEQ) regulations, and the Department of Defense (DOD) Instruction 4715.9, *Environmental Planning and Analysis*, dated May 3, 1996.

1.1 Purpose of and Need for the Proposed Action

The Army and Air Force Exchange Service (AAFES)* proposes to construct a new facility for use by authorized individuals at Fort Huachuca. The facility, a shoppette, will include a fast food restaurant with drive-through, and gasoline station with four pumps. The project would also provide additional revenue to the post and to AAFES.

The purpose of the proposed action is to better serve the needs of the military community. The existing troop store is located in a student housing area, and is operating over capacity. Often the lines can be long both inside and at the pumps. The present facility is stocked for the needs of the MI School students. A shoppette needs to be closer to family housing and the stock needs to be more appropriate for families.

1.2 Location of the Proposed Action

Fort Huachuca, Arizona (Figure 1), is located in Cochise County in southeastern Arizona, approximately 30 miles south of Interstate 10, approximately 64 miles southeast of Tucson and about 8 miles north of the Mexican border.

1.3 Scope of the Environmental Review

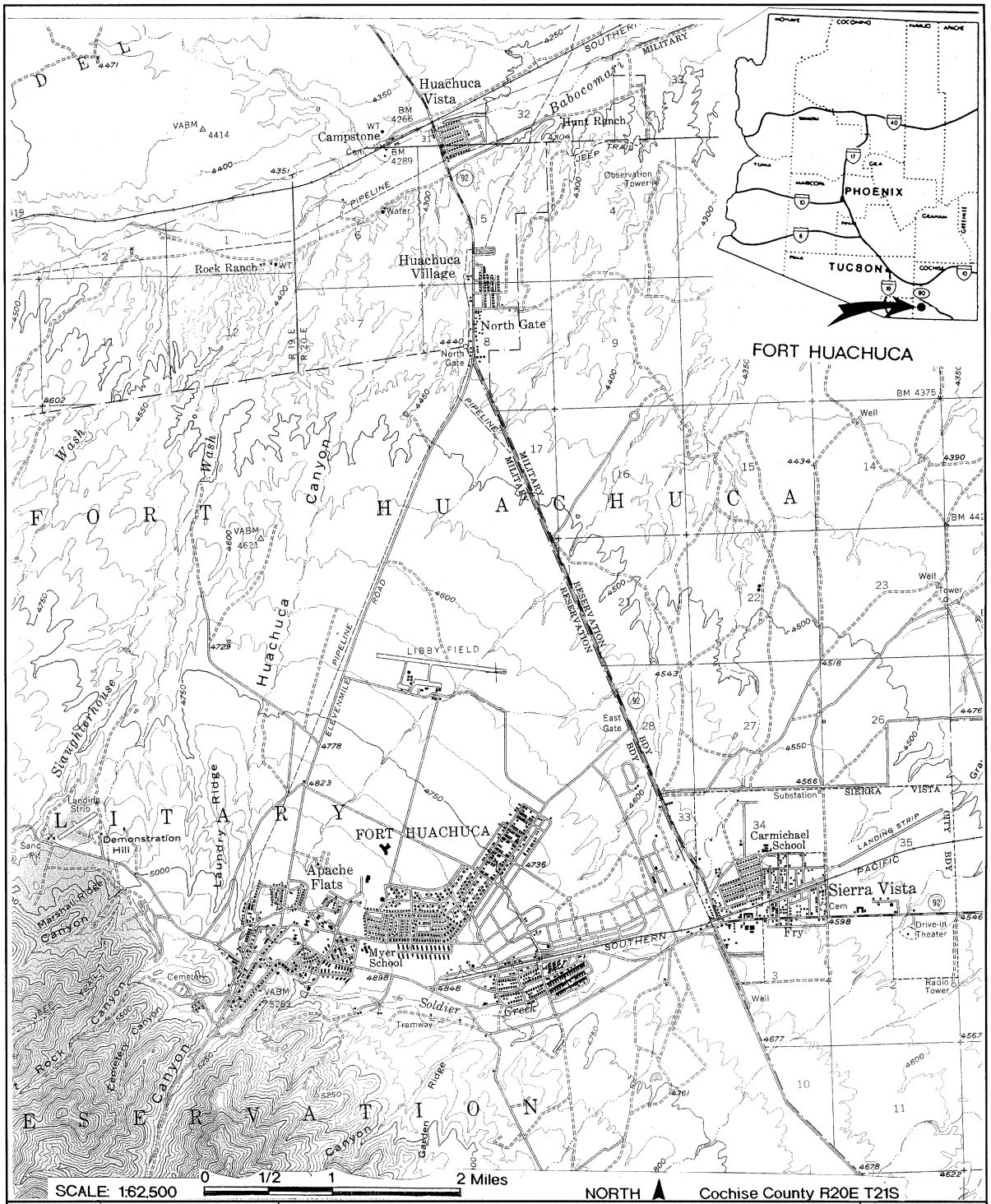
Under NEPA, federal agencies must consider the environmental consequences of proposed actions during the decision-making process, to improve the quality of decision-making. The Decision-makers at Fort Huachuca and AAFES will decide among these alternatives: 1) Construct the facility on a site located on the southeast side of Winrow Avenue and its intersection with Brainard Road; 2) Construct the new facility on a site located east of the intersection of Winrow Avenue and Squier Avenue, or 3) Take no action.

This EA identifies, describes, and evaluates the potential environmental impacts that could result from implementing the proposed action, taking into consideration possible cumulative impacts from other actions planned for Fort Huachuca. The EA also identifies required environmental permits relevant to the proposed action. Although mitigation measures are not required, the EA identifies actions that could minimize environmental impacts.

* The Army and Air Force Exchange Service (AAFES) is a nonappropriated fund instrumentality (NAFI) organized as a joint command of the Army and Air Force under the Department of Defense. AAFES was established more than one hundred years ago. Its mission is to provide quality merchandise and services at uniformly low prices to active duty military, Guard and Reserve members, military retirees, and family members. One hundred percent of the earnings of the AAFES are returned to the Army and the Air Force to provide funding for quality of life programs for service members and their families. AAFES operates more than 10,500 facilities worldwide, including 1,423 retail facilities and 200 military clothing stores.

The following topics were identified for study at Fort Huachuca: noise; air quality; soils; water resources; infrastructure and utilities; hazardous materials and waste; biological resources; cultural resources; socioeconomics; and land use. Assessment of safety and health impacts is not included in this document; all contractors would be responsible for compliance with applicable Occupational Safety and Health Act (OSHA) regulations concerning occupational hazards and specifying appropriate protective measures for all employees

The environmental impacts of other actions have been analyzed through the EIAP, and are addressed in this EA in the context of potential cumulative impacts, if any.



AAFES Shoppette/Class Six/ Gas Dispensing/Toco John's Fort Huachuca Environmental Assessment SOURCE: USGS 1958 (FT HUACHUCA, AZ)	**LOCATION MAP** PROPOSED PROJECT JULY 2000	FIGURE 1

2.1 Introduction

AAFES staff used general site selection criteria to propose several potential sites for the proposed action, including consideration of the following factors:

- Located near family housing areas
- Convenient to customers, in an area of heavy traffic flow and high visibility
- Safe vehicular access
- Adequate space for the new uses
- Adequate availability of utilities
- Surface drainage and grades conducive to constructing project
-

Four alternative sites of approximately 1.5 acres were identified as potentially suitable for development of the proposed action in accordance with the above criteria (Table 2):

1. East of the intersection of Winrow Avenue and Squier Avenue
2. Southeast of Winrow Avenue near its intersection with Squier Avenue
3. West of the intersection of Winrow Avenue and Squier Avenue, near the golf course.
4. Southeast of the intersection of Winrow Avenue and Brainard Road, near the golf course.

These four site locations are shown on Figure 2. The following is a list of potential sites and specific siting criteria. An "X" indicates the failure of a site to meet a siting condition.

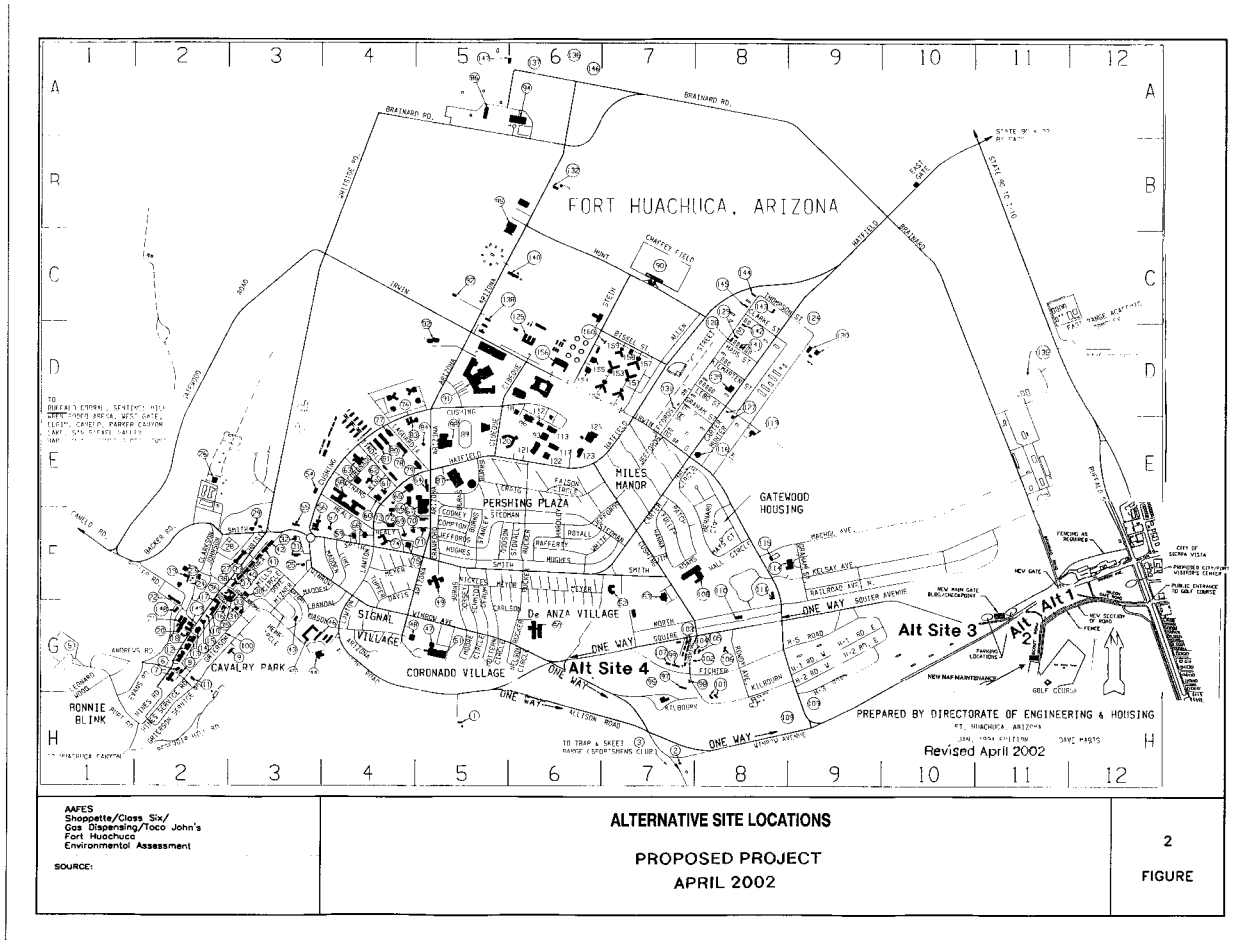
Table 2 Application of Evaluation Criteria to Alternatives*

Site #	Near Residential Areas	Heavy Traffic Flow And High Visibility	Safe Vehicular Access	Adequate Space	Adequate Utilities	Adequate Drainage/ Grades
1						
2	X				X	X
3	X				X	X
4	X				X	

*Blank means criterion met, X means criterion not met.

2.2 Identification of Alternatives Eliminated from Further Consideration

Alternatives 2 and 3 were eliminated from further consideration since they failed to meet three of the evaluation criteria. Sites 1 and 4 substantially comply with the evaluation criteria set forth by AAFES, and are further evaluated in this EA. The proposed action is located on the southeast side of Winrow Avenue near its intersection with Brainard Road, adjacent to the Wilcox Road entrance to the golf course (Site 4 above). The alternative project site is located east of the intersection of Winrow Avenue and Squier Avenue, near the Coronado Village housing area Site 1 above). Throughout the remainder of this document, Site 4 will be called the proposed action, and Site 1 will be Alternative 1.



2.3 Detailed Description of the Proposed Action

The proposed action is to develop and operate a shoppette on Fort Huachuca. The proposed action would consist of approximately a 7,000 square foot building, gasoline-dispensing pumps, and a fast food restaurant with a drive-through window and eat-in dining room, with parking. Activities would include intake of merchandise and sales of convenience store items, fast food preparation and sales, fast food drive-through, and sales of gasoline. The pavement and parking areas would cover approximately an additional 60,000 square feet. The total developed area would be about 1.5 acres. The gasoline dispensing area would initially have four pump islands with a total of 16 hoses, and could service up to eight vehicles at one time. More islands may be added in the future if demand indicates the requirement. Only AAFES authorized patrons would use the facility. These patrons are primarily active duty and retired military personnel, their family members, and certain categories of reserve military personnel.

Construction of the proposed action would last approximately seven months. Construction activities would include removal and storage of existing topsoil, removal of existing vegetation, building construction, paving, and installation of new landscaping. Construction is anticipated to begin in late Summer, 2002.

The site of the proposed action is bounded by Winrow Road to the north, undeveloped grasses and shrubs to the west, developed grassed areas and the golf course to the south, and undeveloped grasses and shrubs to the east (with Wilcox Gate Road just beyond). This site is close to the developed area around the main gate, including the guard facilities and the thrift shop, across the street to the northeast. A conceptual site plan is shown in Figure 3. The proposed action site contains some asphalt pavement and signs and is vegetated with a mixture of grasses and scattered shrubs. To compensate for developing this area, a portion of the adjacent grassland would be enhanced by removing invasive vegetation, predominantly mesquite and desert broom, installing native species, and routing stormwater runoff to the area as irrigation. The undeveloped portion of the site would preserve the existing native plants as much as possible. Upon completion, new landscape areas would contain native plants similar to those currently present. The site slopes slightly to the northeast.

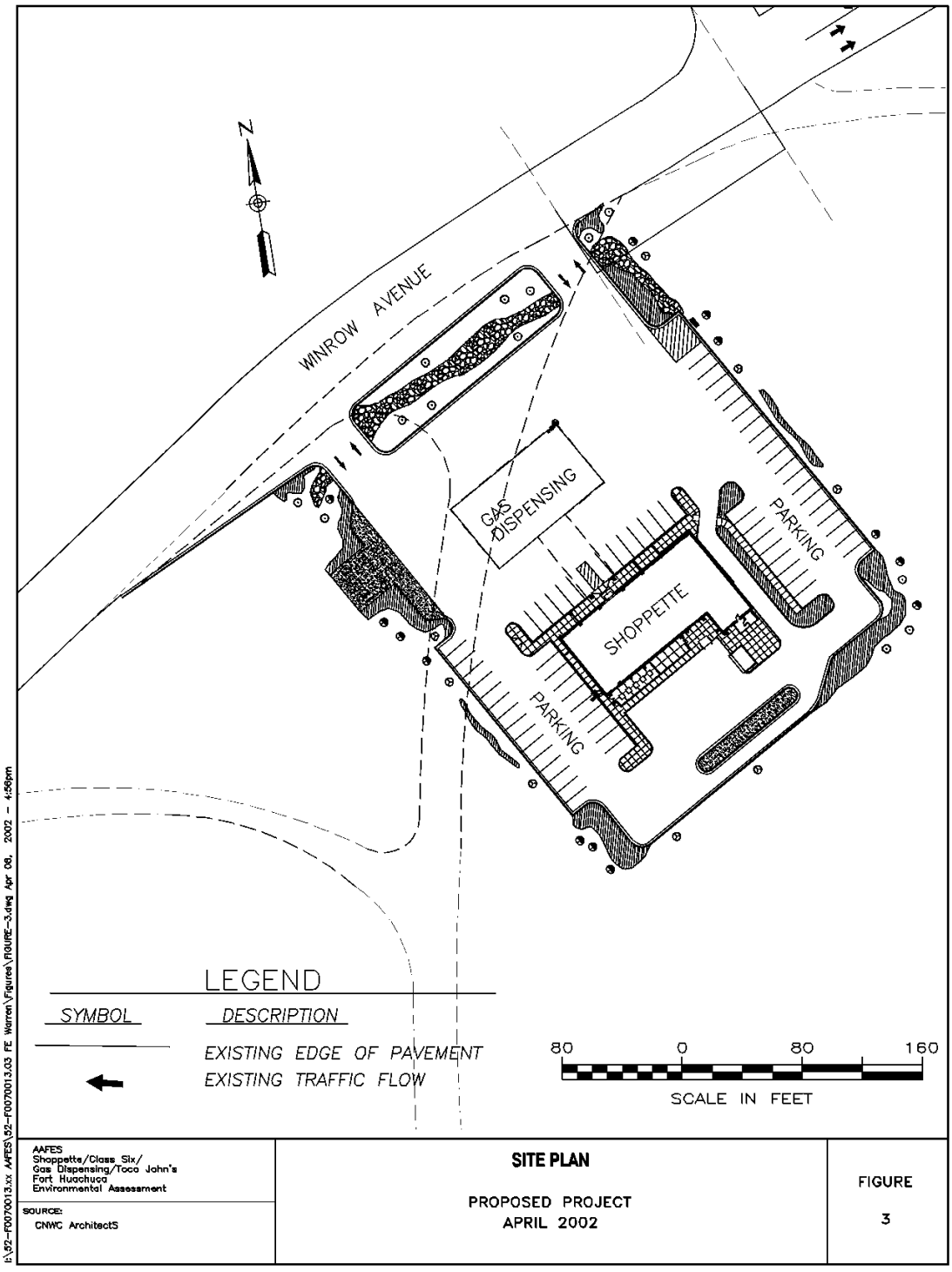
To achieve a no net water use for the project, water conservation measures would be undertaken at other AAFES facilities on the post. These measures would conserve an amount of water equal to the amount this project would require. (See Section 4.4 for more information.)

2.4 Detailed Description of Other Action Alternatives

Alternative 1 would consist of the same action described in Chapter 2.4, but would be located at a different site. This site is close to the Coronado Village housing area directly west, and a school located about 500 feet northwest of the site. Old army facilities are located 2,000 to 3,000 feet east and southeast of the site. Some of these facilities are abandoned and scheduled for demolition. Alternative site 1 is vegetated with a mixture of grasses and scattered shrubs. The site slopes slightly to the east.

2.5 Description of the No Action Alternative

Under the No Action alternative, the proposed action would not be built on the post. In addition, anticipated revenue from the expansion of AAFES service facilities at the post would not be generated.


N
WINROW AVENUE
GAS DISPENSING
SHOPPETTE
PARKING
PARKING
LEGEND
SYMBOL
DESCRIPTION
EXISTING EDGE OF PAVEMENT
EXISTING TRAFFIC FLOW
80 0 80 160
SCALE IN FEET
AAFES
Shoppette/Class Six/
Gas Dispensing/Taco John's
Fort Huachuca
Environmental Assessment
SOURCE:
CNWC ArchitectS
SITE PLAN
PROPOSED PROJECT
APRIL 2002
FIGURE
3
E:\52-F0070013.xx AAFES\52-F0070013.03 FE Warren\Figures\FIGURE-3.dwg Apr 08, 2002 - 4:59pm

3.1 Introduction

The description of the affected environment for the proposed action and the alternative contained in this EA are site-specific. More detailed discussions of various resource areas may be found in previous environmental assessments, and are incorporated by reference. Discussions of Land Use, Climate, Regional and local Geology, Regional water resources,

3.2 Installation Location and Current Use for Each Alternative Site

Fort Huachuca is located in Cochise County in southeastern Arizona, approximately 64 miles south-southeast of Tucson, and 30 miles south of Interstate 10. The cantonment area is just west of the City of Sierra Vista, while Huachuca City is at the northern tip of the West Reservation of the installation. The 5,000-acre cantonment area lies between elevations of 4,400 and 5,200 feet. Both alternative sites are currently undeveloped, with previous disturbance, but no known previous development. Both are vegetated with a mixture of grasses and scattered shrubs. For additional information, the Environmental Assessment titled: Rehabilitation of Historic Adobe Structures, Fort Huachuca, AZ March 2002. is incorporated by reference.

3.3 Socioeconomic Resources

The permanent employee population at Fort Huachuca is anticipated to remain relatively stable at current levels in the reasonably foreseeable future. National priorities may result in changes to this projection. Currently, Fort Huachuca's employee population is about 9,017 military, civilian, and contractor personnel. About 9,000 individuals reside on the fort. Temporary students attending Military Intelligence Training fluctuate from year to year. In FY 2001, approximately 2658 full-time equivalent students attended classes at the MI School. For more information, the Programmatic Biological Assessment for Ongoing and Programmed Future Operations and Activities, Fort Huachuca, AZ. July 2002, is incorporated by reference.

3.4 Water Resources

Due to rigorous conservation efforts, personnel reductions, and changes in watering policy and water use on the fort, well production decreased to approximately 1,655 ac-ft for the year in 2001. Through conservation and facilities improvement, a 40 percent decrease, or over 1,500 ac-ft of water annually, from 1989 withdrawals has been achieved. Treated wastewater is considered a valuable resource at Fort Huachuca and is used to irrigate landscape and recharge the aquifer. For additional information, the Programmatic Biological Assessment for Ongoing and Programmed Future Operations and Activities, Fort Huachuca, AZ. July 2002, is incorporated by reference.

There are no wetlands and no designated 100-year floodplain near the proposed or alternative project sites (pers. comm. John Wickizer, June 2000). Natural topography of the proposed project site is mostly flat, slightly sloping west towards an existing road. The alternative project site is also mostly flat and slopes slightly to the southwest.

3.5 Noise

Sounds that disrupt normal activities or otherwise diminish the audible quality of the environment are designated as noise. The decibel (dB) is the physical unit commonly used to

describe sound levels. The proposed action area is not directly adjacent to any schools, housing or other sensitive noise receptors. It is across the street from a thrift store. The alternative project site is located approximately 500 feet from the Col. Johnston School and directly east of the Coronado Village residential area.

3.6 Air Quality

Air quality is generally influenced by wind direction and speed, geography, vegetation, climate, and volume of natural and artificial pollutants introduced into a basin. Cochise County is in the Southeast Arizona Intrastate Air Quality Control Region which also includes Graham, Greenlee, and Santa Cruz counties. Most of Cochise County, including the Fort Huachuca-Sierra Vista area, has been designated as an attainment area for routinely meeting the established air quality standards. The primary sources of air pollution in the proposed and alternative project areas are vehicles, gas heating, and training exercises that may produce dust.

3.7 Soils

Soils in the Fort Huachuca region tend to be thin, vulnerable to compaction and erosion. Soil protection practices at the fort include avoidance of areas susceptible to erosion, limited maneuver activity when moisture conditions might encourage erosion or compaction, limited off-road vehicle access, and periodic resting of maneuver and training areas to allow vegetation to recover. (Ft. Huachuca, May 1999).

3.8 Infrastructure/Utilities

Sanitary Sewer/Drainage Fort Huachuca is served by a network of collector lines which discharge into mains leading to a 3.1 mgd capacity wastewater treatment plant (WWTP). Current demand on the plant is estimated to be 1.19 mgd. Approximately 400 acre feet of the fort's reclaimed treated waste water is used for landscaping. The remaining treated effluent passes through a pipeline to several aquifer recharge basins on the installation's East Range.

Potable Water System Groundwater is the primary source of potable water in the region. Fort Huachuca's potable water supply is pumped groundwater. Overall, the chemical quality of the groundwater in the area is good and suitable for most uses with minimal treatment.

Solid Waste Management There are no active sanitary landfills on Fort Huachuca. Solid wastes from Fort Huachuca are currently collected and disposed under contract at the Huachuca City landfill. A recycling program for paper and aluminum cans on the installation is managed by the Sierra Huachuca Association of Retarded Citizens (SHARC) and provides funding for some of their activities.

Transportation Systems There are two main entrances to the fort; both connect major local roads to the Fort. Primary highway access is through the East Gate, located adjacent to Arizona State Highway (AH) 90. The other main gate to the fort is at the end of Fry Boulevard, the main road in the Sierra Vista business district. Traffic congestion in the local area is minor, and associated with commuter traffic, from 6:00 to 8:00 a.m. and from 3:30 to 5:30 p.m.

Public Safety Police and security services at Fort Huachuca are provided on a 24-hour basis by both military police and civilian personnel. Three fire stations and one aircraft crash rescue unit serve Fort Huachuca. In addition, the installation maintains a mutual assistance agreement for fire protection with the City of Sierra Vista, Cochise County and the U.S. Forest Service.

Electrical Systems/Natural Gas The Tucson Electric Power Company (TEP) furnishes electrical power to Fort Huachuca via a substation on the Installation. Future increases in electrical energy are considered to be well within the capacity of the existing TEP supply system. Integration of alternative energy sources is also in progress. Natural gas and propane are used for heating and cooking. Fort Huachuca has one of the top-rated Energy Management Programs within DOD.

3.9 Hazardous Materials and Wastes

Hazardous material storage at Fort Huachuca follows the National Fire Prevention Association standard codes, and is subject to inspection by both the Installation Safety Office and the Fort Huachuca Fire Department. When installing underground storage tanks (UST) it is necessary to comply with the regulations described by ADEQ.

Hazardous waste management on Fort Huachuca is regulated by both the EPA and ADEQ under the provisions of the Federal Resource Conservation and Recovery Act (RCRA) of 1976 and the Arizona Hazardous Waste Management Act. Fort Huachuca is a large quantity generator, but does not maintain a Part B permit under RCRA. The Fort Huachuca *Installation Spill Contingency Plan* (ISCP) describes the procedures in the event of a hazardous materials or waste spill, on or off post. The Fort Huachuca Installation Hazardous Waste Management Plan (HWMP) provides the necessary procedures for compliance with the regulations regarding the accumulation, storage, transportation, and disposal of hazardous wastes generated by various organizations on the fort.

3.10 Biological Resources

This section describes the existing biological features of the two proposed project sites including general site observations and a review of threatened and endangered species. The discussion is based on a review of available literature, interviews with staff at Ft. Huachuca, and a site visit. During the site visit, a preliminary ecological survey of the two sites was conducted.

Vegetation: Vegetation within the cantonment area consists of desert landscaping, mowed lawns, several large grassy parade fields and many trees and shrubs that are maintained by the Post Forester. Both project sites are situated between 4,400 and 5,100 feet AMSL. The plant community on both sites is semidesert grassland as described by Brown (1982), with a mixture of grasses and scattered shrubs. Dominant shrubs include velvet mesquite, desert broom, and wait-a-minute bush. A few cane cholla (*Opuntia spinosior*) are also present. The dominant grass species is Lehmann lovegrass, constituting at least 95 percent of the grass coverage.

The proposed action site is very close to the developed areas around the main gate, including the guard facilities, the visitor information center, and the thrift shop. No agaves are present on the site. The mixture of species suggests that the original grassland on site was disturbed by some past activity, possibly cattle grazing or development at the Main Gate.

Alternative site 1 does not have Palmer agave (*Agave palmeri*) present, but some are present a few hundred feet to the east.

Table 3.1 Plants observed on the proposed project sites

Common Name	Scientific Name
Saltbush	*Atriplex* sp.
Desert broom	*Baccharis sarothroides*
Grama grass	*Bouteloua* sp.
Feather dalea	*Dalea formosa*
Lehmann lovegrass	*Eragrostis lehmanniana*
Grasses	Graminae spp.
Burroweed	*Isocoma tenuisecta*
Ragged jatropha	*Jatropha macrorhiza*
Wait-a-minute bush	*Mimosa biuncifera*
Cane cholla	*Opuntia spinosior*
Velvet mesquite	*Prosopis velutina*

References: Benson 1981; Elmore 1976; Epple 1995; Kearney and Peebles 1960

Wildlife

Mammals Numerous mammal species could be present in the vicinity of the proposed project sites. Similar mammal species are likely to be present at each site. Most potential mammals on the sites are secretive and nocturnal. No mammals were seen during the visit to either of the proposed project sites. Several small rodent burrows were found on alternative site 1, as were a few larger burrows. Species that are likely to be common in this grassland habitat include desert cottontail (*Sylvilagus audubonii*) Harris antelope squirrel (*Ammospermophilus harrisii*), Ord's kangaroo rat (*Dipodomys ordii*), and white-throated woodrat (*Neotoma albigula*). The coyote (*Canis latrans*) is likely to be the most common carnivore. Mule deer (*Odocoileus hemionus*) and collared peccary (*Tayassu tajacu*) may cross the sites occasionally, and may forage on the sites. These sites are not suitable cover to provide hiding or resting habitat for larger mammals. A variety of bats could forage over these grasslands, but there are no suitable sites for daytime roosts, maternity colonies, or hibernacula.

Birds A small number of similar bird species are likely to be present at either site. Most bird species are active and visible during daylight hours, and they are the most likely group of vertebrates to be encountered during a brief site visit. During the site visit five species of birds were observed. The bird species observed during the site visit were mourning dove (*Zenaida macroura*), barn swallow (*Hirundo rustica*), northern mockingbird (*Mimus polyglottos*), eastern meadowlark (*Sturnella magna*), and great-tailed grackle (*Quiscalus mexicanus*).

Reptiles and Amphibians No reptiles or amphibians were observed during our visit to the site, although some reptiles were likely present. The two proposed project sites provide limited habitat for amphibians because of the semiarid conditions. No aquatic habitats are available on or close to either of these sites. However, ephemeral washes within a half-mile of either site are

likely to carry water on an intermittent basis after heavy rains. Toads are regularly found in mesquite grasslands far from the nearest available water. The western box turtle (Terrapene ornata) is often found in similar grasslands with sandy soil and scattered shrubs, but none were observed during the site visit.. Thirteen species of lizards and eleven species of snakes could potentially be present on these sites. Two species of rattlesnake (*Crotalus* spp.) could be present in the grassland on Ft. Huachuca.

Threatened and Endangered Species

The U.S. Fish and Wildlife Service (USFWS 2000a) lists species as candidate, threatened or endangered. There are 26 federally listed endangered, threatened and candidate (and proposed for listing) plant and animal species in Cochise County. Of the species listed, only two species could reasonably be expected to occur on or near the proposed project sites and both would be transient visitors.

The lesser long-nosed bat (*Leptonycteris curasoae yerbabuenae*) is listed by USFWS as endangered. These bats are present on Fort Huachuca from about July through October. Lesser long-nosed bats require tunnels or caves for daytime roosts and maternity colonies (USFWS 2000b). They feed heavily on the nectar and pollen of agaves and columnar cacti, and they eat saguaro fruit. Primary threats to this species are loss of foraging habitat through land use conversions and disturbances at roost site and migration stopover points. No agaves, caves, mines or roosting habitat are present at either the proposed action site or alternative site 1. The bald eagle is a transient visitor to Fort Huachuca. No foraging, perching or nesting habitat occurs within the proposed or alternative project sites.

3.11 Historic Properties and Cultural Resources

By law, cultural resources are defined as those which are afforded special legal status due to their historic value or their reflection of a specific ethnic culture. The Upper San Pedro Basin contains evidence of thousands of years of human habitation. Archeological sites spanning over 12,000 years abound in the region. Prehistoric and historic archeological sites have been recorded on 43,289 surveyed acres (59%) of Fort Huachuca. Three prehistoric archeological sites on the fort are currently listed on the National Register of Historic Places (NRHP).

3.12 Land Use

The Fort Huachuca covers over 73,000 acres. The Installation Master Plan establishes Land Use zones, primarily within the 5,270 acre cantonment area. Training areas comprise around 67,000 acres of the installation. Land use adjacent to Fort Huachuca varies considerably.

4.1 Introduction

This chapter describes potential impacts that could occur if the proposed action, the alternative action, or the no action alternative is implemented at Fort Huachuca. Cumulative impacts are also addressed for the additional actions proposed at the post. Other NEPA requirements, such as irreversible or irretrievable resource commitments are noted. Significance criteria used to evaluate potential impacts are discussed at the beginning of each resource area.

4.2 Socioeconomic Resources

The following criteria were used to analyze impacts to socioeconomics: the potential of the project to result in a substantial population increase, to displace residents, or to result in a substantial change in employment.

Proposed Action

Construction personnel needed for the project would be drawn from the current labor force in Cochise County. Therefore, no change is anticipated to the size of the local population due to the project. During operation, the proposed action would be anticipated to employ up to 50 employees, many of which would be part-time jobs, and all of which are expected to be drawn from the existing local labor force, particularly military family members (Connie Carter, AAFES, pers. comm., June 2000). No additional needs for housing, educational facilities, or emergency facilities (i.e., fire, security, and health services) would be anticipated due to construction or operation of the proposed action.

Loss of business to similar facilities located near the project would not be expected since the existing facility is currently operating over capacity. Also, use of the facility would be limited to AAFES authorized patrons. The approximate amount of payroll for the AAFES facility is estimated at $30,000 per month (Connie Carter, pers. comm., AAFES, September 2000). A portion of individuals' salaries would likely be spent at local establishments off-post. Profits from the proposed project would be divided among capital expenditures for new AAFES construction projects and contributions to the post Morale Welfare and Recreation (MWR) programs.

Alternative 1: Impacts would be the same as those described for the proposed action.

No Action Alternative: Under this Alternative, the existing facilities would continue to operate over capacity, resulting in a loss in revenue to AAFES and MWR over the proposed action.

4.3 Water Resources

There is a concern in the region with respect to the potential impact of new water uses having impact on the San Pedro River. The proposed action and the alternative both represent a no net increase of water use.

Proposed Action and Alternative 1

Fort Huachuca Water Supply

The proposed action would use an estimated 1,800 gallons per day (gpd) of water, or 2.0 acre-feet per year (pers. comm., Connie Carter, August 2000). This includes 9 sinks and 3 toilets; no landscape irrigation is planned. The existing troop store uses approximately 2,300 gpd; the proposed action would have 75 percent as many sinks, and less than half as many customers as well. A conservative estimate was used that the proposed action would use about 75 percent as much water as the existing troop store. The proposed action is designed to prevent a requirement for additional groundwater pumping from the local aquifer. Potable water would be obtained from the post's existing water supply system, which draws water from the USPB. Table 4.4-1 demonstrates that all water use by the proposed project would be offset by implementing water-conservation measures at existing AAFES facilities on the fort. AAFES would implement the measures listed in Table 4.4-1 to conserve at least 1,800 gpd (2.0 acre-feet per year). (See Appendix A for additional information and calculations.)

Table 4.4-1 Water Conservation Measures Included in the Proposed Project

Facility	Water Conserving Feature	Estimated GPD Water Savings	Estimated Ac-Ft Water Savings Per Year
Irrigation at the Troop Mall	Shut off permanently	700	0.78
4 Urinals in AAFES controlled restrooms at Ft. Huachuca	Convert to waterless urinals	500	0.56
81 Sinks in AAFES facilities at Ft. Huachuca	Install water-conserving aerators on 26 sinks	Range from 600 – 2300	0.67 to 2.58
	Total	**Low = 1800 High = 3540**	**Low = 2.0 High = 3.9**

Service stations built before the mid-1980s have leaked petroleum products and and other fluids that contaminated soils, groundwaters, and surface waters. To prevent similar problems, the proposed action would be built with current, standard safety features to prevent such contamination.

Surface Water

The proposed action would result in the replacement of grasses and shrubs with approximately 1.5 acres of building and impervious pavement. Surface runoff would be produced from parking lots and from the building roof. Surface drainage from all paved and landscaped areas would be routed by sheet flow to the southwest into a gravel strip and then to an area of remaining grassland. This drainage would help to enhance the grassland. The drainage pattern around both alternatives would generally continue to follow its current path. The accumulation of oil and grease on paved areas may result in periodic inputs to the adjacent grassland. To minimize impacts, the project designers would coordinate design of the facility to incorporate Best Management Practices (BMPs) to improve the quality of stormwater runoff. In addition, the project would be required to follow regulations in the post's Stormwater Pollution Prevention Plan (SWPPP) (Tom Webb, Fort Huachuca, pers. comm., June 2000). The proposed project would include measures similar to those stormwater BMPs currently in place at the existing AAFES gas station and those in the SWPPP.

There are no wetlands or other jurisdictional waters of the United States on either of the proposed project sites. Construction and operation of the proposed action or Alternative 1 would have no impacts to jurisdictional waters of the United States.

Because the site exceeds one acre in size, a NPDES stormwater permit for construction is required. During construction, the potential for soil erosion and sedimentation would increase due to exposure of highly erodable soils. The contractor would use strict erosion control measures to prevent increased erosion and sedimentation during construction. The spill prevention and response measures identified in the SWPPP state that areas of high probability of spill potential be monitored closely, and inspected once a week as required for POL and Hazardous Waste Accumulation Sites. .

No Action Alternative: This Alternative would not result in changes to the existing conditions.

4.4 Noise

The following criteria were used to analyze impacts to noise: the degree to which noise levels generated by construction would be higher than the ambient noise levels, and the potential to annoy or interfere with activities occurring at locations with sensitive receptors.

For both alternatives, the shoppette would be open from 6 am to 10 p.m. most days, but may remain open longer on Friday and Saturday nights. Peak employee activity hours would be from approximately 7 am to 5:30 p.m. The estimated average activity would include about 1,200 customers per day, 25 to 30 employees per day, and up to 15 delivery trucks per day (Connie Carter, AAFES, pers. comm., August 2000).

Proposed Action

Noise is measured as a sound pressure level exerted on the microphone of a sound meter. Sound levels are adjusted (or weighted) for the variation in ear sensitivity to high and low pitched sound and are reported as A-weighted decibels (dBA). The nearest sensitive receptors to the proposed action site would be patrons of the Thrift Shop across the street.

Construction Noise from construction would represent a short-term impact to those in the area, primarily from the exterior construction as heard by people outdoors. Standard construction equipment would be used, including loaders, scrapers, water trucks, dump trucks, and miscellaneous pick-up trucks. This type of equipment may generate noise levels up to 80 dBA. In addition, construction equipment generally operates about 40 percent of the time when it is being used at a construction site (USEPA, 1971). Short term noise impacts from construction and construction related vehicle traffic on the surrounding areas would continue for approximately 5 weeks (Peter Santillana, AAFES, pers. comm., June 2000). Because construction would occur during the day, no adverse noise impacts would be anticipated for the housing area.

Operation Noise from operational activities of the proposed action would be limited primarily to circulation of vehicles, including truck deliveries, during the hours of operation. Up to 400 cars per day and 50 delivery trucks per week would be anticipated to visit the facility (Connie Carter, AAFES, pers. comm., June 2000). Compared to existing noise levels, the noise levels from increased traffic activity would be expected to add a minimal increase to existing ambient noise levels in the project area, and the thrift shop, the nearest sensitive receptors.

Alternative 1: The nearest sensitive receptors to Alternative site 1 during project construction would be the Col. Johnston School approximately 500 feet to the north and the Coronado Village housing area across the street, directly west of the site. Other impacts would be the same as those described for the proposed action.

No Action Alternative: This Alternative would not result in changes from existing conditions.

4.5 Air Quality

The following criterion was used to analyze impacts on air quality: the potential for the project to be considered a major source of emissions as defined in 40 CFR 52.21. If total emissions of any pollutant subject to regulation under the CAA are greater than 250 tons per year for attainment areas, the project would be considered a major source. Typically, Significant Emission Rates (SERs) are used to determine whether an air quality assessment is necessary, or to determine conformity. Either alternative would generate less than the SER for PM_{10}, which is 15 tons per year (tpy).

Proposed Action and Alternative 1

The proposed action has the potential to emit criteria pollutants (particulate matter less than 10 microns in diameter (PM_{10}), carbon monoxide (CO), nitrogen oxides (NO_x), sulfur dioxide (SO_2), and volatile organic compounds (VOC)) due to construction and facility operation, vehicle travel, fuel deliveries and dispensing, and other operations using fuels, solvents, and oils. This project

is not expected to lead to nonconformance, contribute to a violation of the NAAQS, establish a new major source of emissions, or delay achieving a SIP attainment schedule.

Construction Impacts to air quality would be expected to occur during construction due to emissions of fugitive dust as well as emissions from vehicles and heavy equipment. The greatest percentage of construction air emissions would occur in the initial phases of construction, including removal and storage of existing topsoil (to be reapplied after grading), and removal of existing vegetation.

USEPA estimates that uncontrolled fugitive dust emissions from ground-disturbing activities are 1.2 tons per acre per month (USEPA, 1995). It is assumed that of this, 50 percent is PM_{10} (Nellis Air Force Base, 1994). It is likely that ground-disturbing activities would take less than two months. On the basis of this information and the 1.5 acre site development, the total PM_{10} emissions during construction are estimated to be a maximum of 1.8 tons per year.

Equipment engine exhaust and emissions from vehicles of construction workers traveling to and from the site would also be a source of pollutant emissions. Emissions from construction-related vehicles would be minor relative to the total existing vehicular emissions in the area, and would present only a minor temporary impact to air quality. To reduce the potential impacts on air quality during the construction phase, the contractor would perform the following recommended construction practices:

- Cover stored construction material that may be a source of dust
- Turn off vehicle and equipment engines when not in direct use in order to reduce exhaust emissions
- Limit vehicular speeds in the construction area to 15 mph to minimize dust in the area
- Cover truck beds when they are transporting soil to or from the site
- Water exposed soil areas twice a day during dry periods

Construction-related impacts on air quality would be highly localized of short duration. By watering exposed soil areas twice a day during dry periods, emissions can be reduced by approximately 50 percent (USEPA, 1995).

Operation Vehicular traffic would be expected to increase slightly in the vicinity of the proposed action. Most of the 400 vehicles per day anticipated to visit the project would likely be from the existing traffic flow on post. The preferred site is located on the way to and from the Main Gate. Some of the customers currently using the existing Troop Store would likely use this facility instead, so there would be a minimal net traffic increase from the project. Automobiles emit criteria pollutants as described above (NO_x, CO, SO_2, VOCs, and PM_{10}). The traffic levels would be similar to current levels, so a negligible increase in criteria pollutant emission is expected.

The proposed action would install three 12,000-gallon underground gasoline storage tanks; the estimated total monthly fuel sales are 150,000 gallons. The primary air pollutants associated with the transfer and storage of gasoline and motor oil are VOCs and hazardous air pollutants (HAPs). VOCs are regulated because they contribute to the production of ground-level ozone, a component of smog. Compounds contained in gasoline and motor oil such as benzene, toluene,

and xylene are considered HAPs because they are known or suspected human carcinogens. These vapors can escape to the atmosphere during storage and transfer operations. The proposed gasoline dispensing operation would be equipped with state-of-the-art leak detection equipment at the tanks and dispensers. The tanks would be installed with Stage I vapor recovery two point hook for the delivery of fuel to capture the HAP emissions during fuel deliveries. Stage II vapor recovery piping would be installed and capped at the dispensers for future use when and if the Southeast Arizona Intrastate Air Quality Control Region is classified as a non-attainment area.

The amount of gasoline being stored and dispensed at AAFES facilities is expected increase the amounts currently stored and dispensed at the existing facility. However, emissions from fueling would be minimized through the use of vapor recovery control equipment. Based on estimated monthly fuel sales, as given above, the total annual throughput is expected to be 1.8 million gallons. Based on this throughput and the facility location, the station would be covered by the forthcoming Gasoline Service Station General Permit. Based on the low throughput, and the inclusion of Stage I controls, the proposed operation is not expected to contribute any significant emissions in the area

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The project would also have an air conditioning system and condensing units for the cooler and freezers. Refrigerants used in these systems contain chlorofluorocarbons (CFCs), a regulated compound; however no permits are required for air conditioners that are part of a building's HVAC system or for coolers and freezers for food products (Don Butler, ADEQ, pers. comm., June 2000).

VOC, HAP, and CFC emissions from the proposed action would be expected to be minimal. As of now, given that the fort is in an attainment area, there are no permits necessary.

No Action Alternative: Patrons would continue to use the existing facilities. No change in air quality would be expected.

4.6 Soils

The following criteria were used to analyze impacts to earth resources: the requirement for excavation and borrow, the potential to increase erosion, and adverse impacts from geologic hazards.

Proposed Action and Alternative 1

At the proposed action site, project development would require removing grasses and shrubs and slight grading over an area of approximately 1.5 acres. No significant amount of excavation or fill is anticipated. Short-term construction impacts will likely result in soil erosion by wind and water from ground-disturbing activities and the effects of soil exposure. More than one acre of surface area would be disturbed, so a Construction National Pollution Discharge Elimination System (NPDES) stormwater permit would be required. Erosion impacts would likely be minor, as the contractor would follow strict erosion and sediment control measures. Exposed soils would be vegetated as soon as possible once earth-moving is completed. Approximately 1.8 tons of soils are anticipated to be eroded from the site during construction. No long-term impacts to soil resources would be anticipated for the proposed action. Adverse impacts from geologic hazards, including

seismic shaking or subsidence, are not likely to affect this project. In addition, there are no known unique geologic features or mineral resources that would be affected at either site.

No Action Alternative: This Alternative would result in no change from the existing conditions.

4.7 Infrastructure/Utilities

The following criteria were used to analyze impacts to infrastructure and utilities: the potential for project-related changes to create a substantial increase in demand for utilities and the capacity of these utilities to supply the additional demand.

Proposed Action

Sanitary Sewer/Drainage The nearest sanitary sewer lines to the proposed action are located near Railroad Avenue N. A pump station would be required to reach this location, as the lines are located at a higher elevation than the site. The existing sanitary sewers and the existing waste water treatment system have the capacity to accommodate the amount of waste water that may be generated by the proposed action (Peter Santillana, AAFES, pers. comm., June 2000).

Solid Waste Management Solid waste generation would not change substantially as a result of construction of the proposed action. Therefore, only a small increase in solid waste generation due to sales at the facility would be expected to occur.

Transportation Systems The following criteria were used to analyze impacts to transportation systems: the potential to affect traffic volumes or traffic levels of service and consistency with the long-range transportation plan.

Construction Construction of the proposed action would increase the volume of traffic slightly in the project area due to on-road use by construction equipment, construction workforce vehicles, and vehicles delivering construction materials. Construction traffic would likely access the proposed action site via the Main Gate to Winrow Avenue. The size of the construction workforce and number of daily truck trips would vary during construction.
To minimize impacts, the contractor would implement the following measures during the construction phase:

- Provide ample off-street parking for all construction workers to avoid increased congestion near roadsides
- Encourage construction workers to carpool to the site
- Schedule truck trips at intervals over the entire working day, thus avoiding peak-hour times

Operation The proposed action would have entrances and exits from the main entry road into Fort Huachuca. Eventually, another entrance and exit onto the new golf course road may be built, provided sufficient vehicle barriers can be constructed that Force Protection concerns are met. A maximum of 400 vehicles would be anticipated to visit the facility each day (Connie Carter, AAFES, pers. comm., June 2000). The proposed action would provide 84 new parking spaces. About 50 delivery trucks would be expected to service the facility on a weekly basis.

The preferred site is proposed to be located along the fort's main entrance road. Many of the potential customers expected to visit the proposed facility would be in vehicles that currently drive past the site, so little increase in traffic is expected from implementing the proposed action. Also, some patrons to the existing AAFES facility may visit the proposed action instead, so traffic in other parts of the post could experience a decrease.

Public Safety Adequate emergency services for fire, security, and medical care are available and no impacts would be expected to occur.

Electrical Systems/Natural Gas and Energy Conservation All utility connections for the proposed action are available through, and would be linked with, the systems located on nearby streets. The exact locations have not yet been determined at this stage of design. The new facility would use modern construction materials and new fixtures, which are better insulated and more efficient than those in many of the existing facilities on the post. The proposed action would result in the irreversible and irretrievable commitment of energy (i.e., natural gas, electricity, gasoline, and oil).

Alternative 1

Most impacts would be similar to those described for the proposed action.

Operation Alternative 1 would have two entrances and exits from Winrow Avenue, and two from Squier Avenue. The entry lanes would occur "upstream" in the traffic flow from the exit lanes. Winrow and Squier are both one-way. Since this facility would be located near a housing area, it is likely that some of the residents currently drive near the site. The long-range transportation plan shows a proposed primary traffic route along Allison Road, meaning that Winrow Avenue would no longer be the major road exiting the main gate. If this transportation plan goes into effect, alternative site 1 would experience a decline in drive-by traffic from those on their way out of the fort.

Sanitary Sewer/Drainage Sanitary sewer lines for Alternative 1 would tie into an existing sanitary sewer line located along nearby streets. The exact location has not yet been determined at this stage of design.

No Action Alternative: This Alternative would not result in changes from the existing conditions.

4.8 Hazardous Materials and Wastes

The following criteria were used to analyze impacts to hazardous materials and wastes: the potential to affect human health, safety, or the environment.

Proposed Action and Alternative 1

Hazardous Materials Construction of the proposed action would require the use of heavy machinery, which would require maintenance and fuel. Use of construction machinery on the site could introduce a number of solvents, cleaning agents, greases, oils, hydraulic fluids, and fuels (e.g., gasoline and diesel). Paint materials and adhesives would be the only other

potentially toxic substances on the site during project construction. Hazardous materials would be disposed in accordance with all local, state, and federal laws and regulations. The contractor would store hazardous materials in a covered, secured location.

Hazardous materials that could be used, stored, or dispensed during project operations include motor oil, petroleum products, and other automotive fluids. Spill prevention systems would be built into the project to protect the environment.

There would be three 12,000-gallon gasoline USTs, one for each grade of gasoline. The tanks would be double-wall with provisions for detection of leakage from the tanks. The piping would also be double-walled with leak detection. The equipment dispensing the gasoline would record the amount of gasoline dispensed from each tank between refill times as an additional check against spillage.

The facility would be equipped with a spill control kit including absorbent pads. Since construction and use of the gasoline dispensing station would be in accordance with all required safety standards and procedures, it is unlikely that any release of gasoline, oils, or other automotive fluids would occur. However, in the event of a spill of hazardous materials, the facility would implement cleanup activities in accordance with the post's Stormwater Pollution Prevention Plan.

The amount of gasoline being stored on the site would be similar to the quantities stored at the existing service station. Spill prevention and leak detection measures would be built into the project, thus the risk of contamination would be low.

Hazardous Waste

The operators of the gasoline dispensing station would utilize the Fort Huachuca hazardous waste storage and handling program for disposal of hazardous wastes or any wastes requiring special handling. There is no known history or evidence of the use, storage, or dumping of hazardous or toxic materials at either the proposed action site or the alternative project site. Therefore, groundwater monitoring and other leak detection techniques may be employed to prevent any contamination resulting from the installation of gasoline underground storage tanks. All areas where there is a potential for gasoline or other hazardous materials spills will be sloped to a containment area to be pumped into the proper container. The container will most likely be a 50 gallon drum that is removed to a hazardous waste facility.

No Action Alternative: This Alternative would not result in any change to existing conditions.

4.9 Biological Resources

Vegetation: Construction of the proposed project at either site would require removal of vegetation from approximately 60,000 square feet (1.5 acres) for the proposed facility. The dominant plant species affected by the clearing would be exotic and invasive species such as Lehmann lovegrass, velvet mesquite, and desert broom. Because both of the proposed project sites are adjacent to existing roads and other facilities, construction at either of these sites would not contribute to fragmentation of remaining grassland habitat. The site layouts propose green areas between parking areas and existing roadways. These areas would be cleared of existing vegetation and would be landscaped with native shrubs, herbs, and cactus species suitable for this environment.

To compensate for the impacts to the grassland habitat, improvements would be made in an adjacent similar habitat. Mesquite and desert broom would be removed and the area would be enhanced with a mixture of native grasses. Additional water would be provided to the enhancement area from stormwater runoff from the project site. This water would be spread across the enhancement area to minimize the risk of erosion. These efforts are expected to create a habitat that is more attractive to birds and small mammals than the existing habitat on either of the proposed project sites. No further mitigation measures are proposed for impacts to the vegetation.

Wildlife

The construction phase of the proposed project will cause a temporary disturbance for wildlife on the proposed action site and immediate vicinity. Because of the limited area involved, it is anticipated that most wildlife species would be able to avoid the disturbance by relocations to adjacent undisturbed areas. Clearing of vegetation and excavation of the trench would result in some unavoidable mortality to burrowing rodents and other forms sequestered underground. After construction of the project and parking areas, the green areas would be revegetated and the grassland habitat on an adjacent area would be enhanced. During operation of the project, there would be a concentration of vehicular traffic in the driveways and parking areas. However, it is expected that much of this traffic would be using the existing roadways and relatively few new trips would be generated. Because of the proximity to existing heavily-traveled roadways, a school, residential areas, a thrift shop, and main gate facilities, the long-term impacts to wildlife at either site are expected to be minimal.

Threatened and Endangered Species

Only two federally listed endangered species, the lesser long-nosed bat and the bald eagle, could potentially occur in the proposed project sites. The proposed project sites contain no suitable foraging or roosting habitat for the bat. Although potential foraging habitat occurs in the vicinity of alternative site 1, the proposed action is not expected to have an effect on the lesser long-nosed bat. Because no suitable foraging, perching or nesting habitat occurs for the bald eagle within the proposed project sites, the proposed project is expected to have no effect on the bald eagles.

After the project is in operation, new foraging habitat may be created for brown-headed cowbirds by careless disposal of trash and food products by patrons of the facility. This effect would be minimized by providing sufficient trash disposal containers and by efforts to clean parking areas of any food waste. Cowbirds utilizing this new resource are not likely to present a threat to southwestern willow flycatchers because of the distance (eight to ten miles) from the proposed project sites to potential flycatcher breeding habitat near the San Pedro River or the Babocomari River. Construction and operation of the proposed project at either site would have no effect on the southwestern willow flycatcher.

Several riparian area dependent threatened or endangered species may be present in the San Pedro Riparian National Conservation Area (SPRNCA) and the Babacomari River near the fort. These include southwestern willow flycatcher, spikedace, loach minnow, Canejo Hills Ladies tresses, and Huachuca water-umbel. The proposed project has been designed to have no net

groundwater withdrawal, and there would be no cumulative impact to or degradation of surface water flow, water quality, or riparian habitat in the San Pedro or Babacomari Rivers. Because the proposed project would have no impact on water withdrawals, it would therefore have no effect on these water-dependent or riparian-dependent species.

In summary, neither the proposed action nor Alternative 1 would have any effect on any of the endangered, threatened, or species of special concern in this vicinity or in Cochise County. Therefore, construction and operation of the proposed action or Alternative 1 would present no significant environmental impact to threatened or endangered species.

4.10 Cultural Resources

The following criteria were used to analyze impacts to cultural resources: the potential to disturb properties that are listed or eligible for inclusion on the NRHP and the potential to disturb an area of traditional or religious archaeological importance.

Proposed Action and Alternative 1: The proposed action would not affect any known historic properties. The Post Archaeologist has conducted a pedestrian survey on the proposed action and alternative sites. No historic properties were found on either the proposed action site or Alternative site 1 (Charles Slaymaker, Ph.D., Ft. Huachuca, pers. comm., June 2000). During earth-moving activities, the Post Archaeologist or another qualified archaeologist would be on-site to monitor whether any subsurface historic properties are affected. If archaeological resources were unearthed during construction, the contractor would be required to stop excavation in the vicinity of the finding and notify the Post Archaeologist. In addition, the 11 Native American tribes that have an interest in the area and the SHPO must be consulted first. Any affected historic properties would be considered in accordance with existing laws, and consultations with the SHPO and affiliated Native People.

No Action Alternative: This Alternative would not impact historic and archaeological resources.

4.11 Land Use

The following criteria were used to analyze impacts to land use and zoning: consistency with land use plans and compatibility with existing and future surrounding land uses.

Proposed Action

The proposed action is within Fort Huachuca (under federal jurisdiction), with land use designations that do not conflict with local or state land use or zoning designations. The proposed action site is designated as Open Space. Use of the site for the proposed action would require designating the land as Community Facilities. Given the location adjacent to the main gate and other developed areas, use of the site for the proposed action would be compatible with surrounding uses. The proposed action would have a cumulative effect on the loss of available buildable lot space on Fort Huachuca and the conversion of 1.5 acres of vegetated area to impervious surfaces.

Alternative 1

Alternative site 1 is designated as Outdoor Recreation; the site is not actually used for recreation. Use of the site for the proposed action would require designating the land as Community Facilities.

Given the location adjacent to housing and other developed areas, use of the site for the proposed action would be compatible with surrounding uses. Other impacts would be the same as for the proposed action.

No Action Alternative: This Alternative would not result in changes to land use.

4.13 Cumulative Impacts

Cumulative impacts, as defined by the CEQ (40 CFR 1508.7), is the "impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of which agency (federal or non-federal) or person undertakes such actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time." This chapter attempts to put the minimal impacts of the proposed action into a regional context by describing the events and trends that impact or may reasonably be expected to impact the affected environment.
Other actions proposed (but not necessarily all funded) for Fort Huachuca during the same time period include the construction of the following projects:

	Project Description	**Scope**
	ON-POST, various federal proponents	
FY 2006 or later	Vehicle and Electronic Maintenance Shops	Replace approximately 67,000 sf of facilities
ongoing	Whole Neighborhood Revitalization	Renovate or replace 110 family units
FY2001-2003	Effluent Recharge and Reuse System upgrades	
FY2002 or later	Renovate Golf Clubhouse and Irrigation	30,000 sf, if funded
FY2003 or later	Whole Neighborhood Revitalization	Renovate or replace 128 family units
FY 2003 or later	Whole Neighborhood Revitalization	Renovate or replace 168 family units
FY 2003 or later	RV Park Expansion	100 spaces, if funded
FY2003 or later	Unmanned Aerial Vehicle (UAV) Testing and Training Program Upgrade	Up to 50 acres, if funded
FY 2003 or later	DoD Training Facility	Renovate Eastern Academic Complex
FY 2003 or later	Whole Neighborhood Revitalization	Renovate or replace 166 family units
FY 2003 or later	Whole Neighborhood Revitalization	Renovate or replace 163 family units
FY2007 or later	Whole Neighborhood Revitalization	Renovate or replace 148 family units
FY2007 or later	Youth Center Addition	5,332 sf, if funded
	OFF-POST (not Ft. Huachuca proponency)	
In progress	VA Cemetery (State of Arizona)	130 acres
	Bachmann Springs Resort (near Tombstone)	1700 acres
	RV Park Expansion	50 acres

The communities surrounding the fort continue to grow modestly.The proposed action is only one of several projects currently in the planning stages at Fort Huachuca. The proposed project would impact about 1.5 acres. The total area of impact of the projects is approximately 233 acres. In addition to developments on Fort Huachuca, there is ongoing development activity in and around Sierra Vista, but specific projects and areas of impact are not known at this time.

Noise. The proposed action represents no change in overall noise levels in the Fort Huachuca area and therefore would not contribute to cumulative impacts on noise in the region. Each project may present short-term noise impacts during construction.

Air Quality. Cumulative impacts of development on air quality include short-term increases in particulates during construction and pollutants from any increase in vehicle use. The proposed action is not expected to increase vehicle-miles driven, and therefore would not contribute to cumulative impacts.

Soils. Soils in the region are known to be prone to erosion and gully formation with the removal of their protective vegetative cover. Each project is not anticipated to have a significant impact on earth resources. However, if erosion control measures are not appropriately designed, strictly followed, and well-maintained, soil erosion could be a problem in the future.

Water Resources. Although conservation efforts have offset the impacts of recent population increases, such efforts will be difficult to continue as existing water use systems are upgraded. The Upper San Pedro Partnership (USPP) is a group of land management and support agencies/entities joined by a memorandum of understanding to identify, prioritize, and implement comprehensive policies and projects to meet the water needs in the Sierra Vista subwatershed. The group has agreed "to facilitate and implement sound water resource management and conservation strategies" that consider both human and environmental water resource requirements. Planning efforts to minimize the impacts of population growth on water use are considerable. The proposed action is not expected to contribute to cumulative impacts on water resources. Each new project is also not likely to contribute to cumulative impacts on water resources, as the fort generally implements a "no net increase in water use" policy.

Infrastructure/Utilities. Ongoing and reasonably foreseeable future activities are not expected to contribute to any cumulative impacts on infrastructure and utilities. General urban growth and an increase in tourism may cause an increased demand for utilities in the future and may cause increased traffic congestion at some locations.

Biological Resources. Cumulative impacts to biological resources could result from the removal of wildlife habitat, an increase in recreational use of habitat, an increase in invasive species, or impacts on water available to species in the San Pedro River. The proposed project would have no impact on threatened or endangered species, and the impacts to the semidesert grassland habitat would be minimized by enhancement of the grassland conditions on an adjacent area. Therefore, the proposed project would have no cumulative impact on vegetation or wildlife resources of this vicinity.

Cultural Resources. The proposed action would have no adverse effect on known historic properties in the region. It is not known at this time what impacts other projects may have on historic properties.

Socioeconomic Resources. Population in the local area is projected to increase; therefore, economic activity is also likely to increase. The local economy off-post would not gain from profits generated by the proposed action; therefore no cumulative impacts would result to the local economy.

Land Use. Recent trends in the area surrounding Fort Huachuca include public and non-profit acquisition and restoration of habitat areas, a decline in land dedicated to agriculture, and an increase in urban growth, especially of the Sierra Vista urban area. In addition, the new Karchner Caverns State Park in Benson is expected to enhance tourism to the area. Copper mining in Mexico is expected to continue in the reasonably foreseeable future. The conversion of 1.5 acres of vegetated area to impervious surfaces by the proposed action would not be significant in this

regional context. The proposed action will have no cumulative impact on land use in this vicinity.

4.14 Unavoidable Adverse Environmental Impacts

No unavoidable adverse environmental impacts would result from either the proposed action or Alternative 1. The majority of impacts identified were determined to be minor.

4.15 Compatibility of Proposed Action and Alternatives with Objectives of Federal, Regional, State and Local Land Use Plans, Policies and Controls

Implementation of either the proposed action or Alternative 1 would result in short-term impacts to air quality, noise, and traffic (during construction), and longer-term impacts from disposal of solid waste. In turn, the proposed action would improve the conditions for those who live and work at the installation and for other authorized patrons by offering convenience items, gasoline, and fast-food near to residential areas.

4.16 Relationship between the Short-Term Use of the Environment and Long-Term Productivity

This project would result in the short-term use of certain resources, such as land, energy, construction materials, and labor. It would produce the benefits of allowing the existing facility to serve the troops in a timely fashion and provide convenience to families living on the post.

4.17 Irreversible and Irretrievable Commitments of Resources

In addition to short-term uses and long-term productivity of the environment, project construction would result in direct and indirect commitments of resources. The proposed action would result in the commitment of energy (i.e., natural gas, electricity, gasoline), construction materials (i.e., concrete, lumber), and human resources (i.e., labor). Project operation would also require the use of other resources over the life of the proposed project. The amounts of these resources to be consumed cannot be accurately determined at this time and should be considered irretrievable and irreversibly committed to the proposed project.

5.0 FINDINGS AND CONCLUSIONS

Based on the findings summarized in the table below, and the facts and analysis contained in this EA, the implementation of the proposed action would not constitute a major federal action with significant impact to the human environment. Accordingly, the requirements of the NEPA, regulations promulgated by the President's CEQ, and Army Regulation 200-2 are fulfilled and an Environmental Impact Statement (EIS) is not required.

Summary of Findings of Environmental Impact

TOPIC	PROPOSED ACTION	ALTERNATIVE 1	NO ACTION ALTERNATIVE
Noise	Short-term impacts to thrift store patrons, during construction	Short-term impacts to school, during construction	No change
Climate and Air Quality	Possible short-term particulate emissions during construction Long-term impact due to emissions from fuel delivery/dispensing	Possible short-term particulate emissions during construction Long-term impact due to emissions from fuel delivery/dispensing	No change
Earth Resources	Possible short-term erosion impacts during construction	Possible short-term erosion impacts during construction	No change
Water Resources	Possible inputs of oil and grease to grassland	Possible inputs of oil and grease to grassland	No change
Infrastructure and Utilities	Requirements for services and utilities can be accommodated but pump station required for sanitary sewer; Slight traffic increase in area; Possible short-term traffic impacts during construction	Requirements for services and utilities can be accommodated; Slight traffic increase in area; Possible short-term traffic impacts during construction	No change
Hazardous Materials and Wastes	To be used and disposed in accordance with applicable laws and regulations	To be used and disposed in accordance with applicable laws and regulations	No change
Biological Resources	Removal of minor existing vegetation; short-term effect on wildlife populations; long-term effect on individual animals	Removal of existing native vegetation; short-term effect on wildlife populations; long-term effect on individual animals	No change
Cultural Resources	No impacts anticipated	No impacts anticipated	No change
Socioeconomics	Employees to be drawn from existing residents	Employees to be drawn from existing residents	No change
Land Use	Change in land use designation needed	Change in land use designation needed	No change

Name	Title	Organization	Qualifications
Gail Shaloum, RLA	Project Manager	URS Group, Inc. Portland, Oregon	B.S., Landscape Architecture M.S., Environmental Science and Engineering
Gillian Friedrichs	Staff Planner	URS Group, Inc. Portland, Oregon	B. A., Geology M.S., Environmental Management
John Holroyd, P.E.	Senior Consultant	URS Group, Inc. Portland, Oregon	B.S., Civil Engineering M.S., Sanitary Engineering
Dan Howard	Word Processor	URS Group, Inc. Portland, Oregon	
Thomas R. Strong	Project Biologist	URS Group, Inc. Tucson, Arizona	BS, Chemical Engineering MS, Chemical Engineering Ph.D., Biology Certified Senior Ecologist (Ecological Society of America)
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